



WILD Kids



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Elk In Arizona

Elk, Cervus elaphus, are a native North American species. At one time there were six subspecies of elk found in North America. Today only four of the original six subspecies are found in scattered pockets in the U.S. and Canada.

The Eastern woodland elk and Merriam elk are the two extinct subspecies of elk. The Eastern elk began to disappear very early in the history of the United States. It was gone in the Carolinas in 1750, Georgia in 1773, New York and Virginia in 1847 and West Virginia in 1875. The last Eastern elk herd died out in Kansas in 1892.

The Merriam elk occurred in southern Arizona, New Mexico and west Texas. It was the largest and darkest of the North American elk subspecies. Merriam elk probably died out in Arizona around 1900, mainly due to over hunting by early settlers. In 1913 the Winslow Elk Lodge transplanted 86 elk from Yellowstone. They were shipped in crates by train and wagons. They were released in the Sitgraves National Forest on the north slopes of the Mogollon Rim. Another 217 elk were transplanted between the years 1913 and 1928 in other Arizona mountain ranges. Those 303 transplanted elk are the basis from which all existing elk in Arizona descended. The rest of the natural history discussion of elk in Arizona will be about the nonnative subspecies from Yellowstone.

Elk are what biologist call an edge species. An edge species is an animal or plant that prefers the habitat found where two plant communities come together. For elk, the two plant communities are usually forest and meadow. Elk prefer mountain meadows (or other grassy areas) for feeding and the timber for resting. Areas with lots of downed timber are especially important since this is where cow elk hide their newborn calves.

Elk are more gregarious than mule deer or whitetail deer. In the winter, bulls, cows and calves typically come together to form herds. In summer, herds break-up. Bulls travel alone or in small bachelor herds of five or six. Pregnant cows isolate themselves until after they have calved. Cows and calves then group together and form nursery herds.

Elk are migratory occupying separate summer and winter ranges. In summer elk can be found in mountain meadows and coniferous forests of central and eastern Arizona. In winter they move to lower pinyon-juniper woodland, mixed conifer forest, plains grasslands or even desert scrub. In the White Mountains, elk may move as much as 30 miles between summer and winter ranges.

Elk are studied extensively by the Arizona Game & Fish Department. They have found that migrating elk leave their summer range about November 25. and are on their winter range by December 15. Migration from the winter range begins in late

Natural Predators



Elk are a very large mammal, and have few natural predators. Calves are taken by black and grizzly bears, mountain lions, coyote and wolves. Adults are preyed upon by bears, mountain lions and wolves. In Arizona only three of these natural predators are left. The other two are extirpated. Do you know which are still found in Arizona? Hint: Look at the tracks on the right.



March or early April and their summer range is occupied by mid-May. Timing of winter migration usually correlates with the first fall snow while summer migration coincides with the greening of various grasses.

Preferred elk food during spring and summer is grass. Forbs, which are broad leafed non-woody plants including wildflowers and weeds, become important food items in mid to late summer. Principle winter food items are leaves and buds of shrubs and low trees. Elk browse such plants as serviceberry, mountain mahogany, sagebrush, rabbitbrush, cliffrose, manzanita, aspen, conifers oaks (including acorns), snowberry and willows.

In fall mature bulls begin to acquire herds of female elk. These harems can number between five and 30 individuals and include yearlings and calves. Bulls vigorously defend their harems. Bugling and one-on-one encounters between rival bulls are common. Some of the encounters consist of antler-to-antler clashes, while others consist of rearing up on the hind legs and kicking with the front legs. Rarely do serious injuries occur.

Breeding occurs in September and October. Cows are typically sexually mature by 2.5 years of age, bulls by 1.5 years and yearlings rarely breed. The length of gestation (pregnancy) is about 8 to 8.5 months. Cows usually give birth to one calf each year. Rarely do cows have twins.

Activity I: Make A Range Map

Range maps show the distribution of plants and animals. Some range maps are very specific and others are very general.

Using the following locations, make a range map for elk in Arizona. You may need to do some research if you or your classmates do not know where the locations are. Locations are given in no particular order.

When you have finished plotting the locations, ask yourself what elk need to survive. Should the range be one patch or two or three or four or more? Remember, elk in Arizona have been transplanted to various areas around the state.

Locations:

Hannagan Meadow, White Mountains; Apache County, head of the Black River; Springerville; Coconino County, Chevelon Butte; Hualapai Mountains; Buck Springs, Mogollon Plateau; Cataract (Havas) Canyon, Coconino Plateau; Jacob Lake in House Rock Canyon; Coleman Lake near Flagstaff; Sunflower Flat near Williams; Prescott; Star Valley; Canyon Creek; Jacques Marsh near Showlow; Williams Creek National Fish Hatchery; Luna Lake.

Activity II: Elk Math

You can find math just about anywhere you look. Here are some interesting math facts about elk. Can you solve the problems using these facts?

- ✓ The average adult bull weighs 700 pounds.
- ✓ The average adult cow weighs 450 pounds.
- ✓ Bull's antlers can weigh as much as 40 pounds.
- ✓ Elk must eat about 3 pounds of food every day for each 100 pounds it weighs in the spring, summer and fall. Elk need to eat 2 pounds of food every day for each 100 pounds of weight in the winter.
- ✓ There are usually 25 bulls to every 100 cows.
- ✓ In some areas, mountain lions kill four times as many elk as all other predators together.
- ✓ In November 1937 a bull elk was shot near Clear Creek, not far from where the 1913 transplanted elk were released. The elk had a U.S. Biological Survey tag of 1913 in its ear.
- ✓ In one study, 18% of the bulls did 86% of the breeding.

- Q1: How much food will a cow eat in one year? (assume 1 year is made up of 4 91-day seasons)
- Q2: In a winter herd of 5 males and 19 females, how much food will they require for 90 days?
- Q3: In one predation study bears killed 6 elk, coyote killed 2 calves, and wolves killed 15 adults. How many elk were killed by mountain lions?
- Q4: What was the youngest age possible of the elk killed near Clear Creek in 1937? From the information given, can you calculate its exact age? Why or why not?
- Q5: In a recent survey, 2,655 elk were counted. How many were bulls? Cows?
- Q6: Using the numbers from Q5, how many males did most of the mating?